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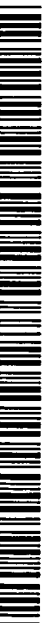


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WO 2004/004647 A3

(54) Title: NANOPARTICLE POLYANION CONJUGATES AND METHODS OF USE THEREOF IN DETECTING ANALYTES

(57) Abstract: This invention provides polyanionic polymer conjugates containing non-nucleotide polyanionic polymers that are useful in detecting target analytes such as proteins or small molecules. The invention also provides nanoparticle bound to polyanionic polymer conjugates and methods of preparation and use thereof. The polyanionic polymer conjugates have the formula: L-O[PO₂-O-Z-O]_n-PO₂-O-X wherein n ranges from 1 to 200; L represents a moiety comprising a functional group for attaching the polyanion polymer to the nanoparticle surface; Z represents a bridging group, and X represents Q, X' or -Q-X', wherein Q represents a functional group for attaching a recognition probe to the polyanion polymer, and X' represents a recognition probe.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/21021

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C07H 21/00, 21/02, 21/04

US CL : 435/6; 536/22.1, 23.1, 24.3, 25.3

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/6; 536/22.1, 23.1, 24.3, 25.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,214,560 B1 (YGUERABIDE et al) 10 April 2001, see entire document.	1-50
Y	US 4,996,143 A (HELLER et al) 26 February 1991, see entire document.	1-50

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

PCT/US03/21021

Continuation of B. FIELDS SEARCHED Item 3:

STN

search terms, oligonucleotides, nanoparticles, hybridization, fluorescence, label, detection, probes